



# BUSDUCTS



Busduct is an electrical conductor that carries high current. It is contained in a metallic enclosure and connects two large electrical equipment. It may be placed between switchgears, between generator and step-up transformer or between transformer and switchgear etc.

**The inherent advantages of Busduct are:**

- Effective magnetic shielding, thus reduced electromagnetic stress during short circuit
- Limiting temperature rise in the adjacent steel members to very low value
- High safety to personnel due to inaccessibility of live bus
- Avoidance of phase to phase faults
- Very low maintenance due to air and water tightness features

**Three types of Busducts:** Isolated Phase Busduct, Segregated Phase and Non- Segregated Phase Busduct are employed for different applications as mentioned in the table below:

Type of Busduct	Application
<b>Isolated Phase Busduct</b>	For Generators, with currents from 3000 Amperes at 11kV and above.
<b>Segregated Phase Busduct</b>	For high voltage and high current connection upto 15kV, 4000 Amperes.
<b>Non- Segregated Phase Busduct</b>	For L.T. Applications up to 415V, 4000 Amperes.

**ISOLATED PHASE BUSDUCT**

Isolated Phase Busduct has the advantage of near 100% magnetic shielding, and total elimination of chances of phase to phase faults.

Powergear’s present manufacturing range is upto 24kV/ 30,000 Kilo Amperes. Higher ratings can be designed and manufactured.



**SEGREGATED PHASE BUSDUCT**

In Segregated Phase Busduct, all the three phases are separated from each other with a barrier. The barrier may be made of aluminium or insulating material. Better shielding can be achieved by providing metallic barrier.

The present range of manufacture for this type of Busduct is upto 15kV, 4000 Amperes.



### NON-SEGREGATED PHASE BUSDUCT

All the three phase bus conductors are mounted inside a common metallic enclosure made out of mild steel or aluminium alloy. No phase barriers are provided between phases. This type is mainly used for LT applications, between switchgears or between transformer and switchgear.



### CONSTRUCTION

The Busbars inside the busducts are generally made of Aluminium alloy conductors. However, in some specific cases, Copper conductors are used. Based on the mechanical and electrical specifications, the busbar profile is either flat, single/double channel (in box form), octagonal or circular.

The busbar is mounted on porcelain or epoxy resin cast insulator. Depending on the design and type of busduct, either one, two or three insulators per location are used. The insulators are spaced at regular intervals.

The busbar is provided with expansion joints at appropriate intervals to cater to thermal expansion/contraction.

The enclosure profile for segregated phase and non - segregated phase busduct is rectangular and made up of mild steel or aluminium. In the case of Isolated Phase busduct, Aluminium alloy sheets with a circular cross section is preferred.

Aluminium, Neoprene Rubber or Stainless Steel bellows are fixed to the enclosure near the transformer or in the run of busducts to take care of misalignments due to civil works. Bellows are also used near generator terminals to isolate the busduct from the vibration of the turbo-generator.

Wall frame assembly with epoxy resin cast or porcelain seal-off bushing is introduced in the run of the Busduct when it crosses from indoors to outdoors to prevent ingress of atmospheric air.

### TESTS

Busducts are subjected to various mechanical and electrical tests as per relevant international standards to prove air and water tightness and electrical withstand capacity.

***Busducts are custom made products. Powergear, with its experience of more than 35 years, will provide suitable recommendation taking into consideration various factors which affect the design of busducts.***

## Other Products Designed and Manufactured



E-House Inside View



E-House Outside View



Generator Circuit Breaker Compartments



Generator Accessories Cubicle



Motor Control Centers



Terminal Compartment

### ABOUT POWERGEAR

The group has been in the field of design, manufacturing and erection of high current busduct, specialized switchgear and control panels. With certifications like ISO 9001, ISO 14001, OHSAS 18001, AWS and many awards for excellence in product quality, fulfillment and long term association with many global giants, it is natural that best products and services are assured. Powergear products are in operation in more than 50 countries across the world.



Scan this QR code with your smart phone for a direct link to our website.

### Powergear Limited

Plot No – B-33 , Phase II, 5th Main Road , SEZ-MEPZ  
Tambaram, Chennai – 600045, INDIA

Tel : +91 44 42901111

Fax: +91 44 22624434

Email: [enquiries@powergearlimited.com](mailto:enquiries@powergearlimited.com),

[www.powergearlimited.com](http://www.powergearlimited.com)